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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/864,808

05/25/2001

Orhan C. Tuncay

TUNCAY-I

2593

7590

04/21/2004

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EXAMINER

BHATNAGAR, ANAND P

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 04/21/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/864,808

Applicant(s)

TUNCAY ET AL

Examiner

Anand Bhatnagar

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05/25/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A.) Claims 1, 4, and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemchen (U.S. patent 6,081,739) and Chishti et al. (U.S. patent pub. 2001/0002310 A1).

Regarding claim 1: Lemchen discloses a method of creating a digital computer model of the craniofacial features of a person, comprising the steps of (col. 1 lines 10-20, where the head and/or face is read as craniofacial):

creating a first computer model of the person's facial features (Lemchen; col. 5 lines 20-25).

Lemchen discloses to create a computer model of a person's facial features, including the jaw, by integrating different scans taken of a person's face. Lemchen does not teach to produce a physical model of the teeth, create a computer model from the physical model of the teeth and then incorporate the computer model of the teeth into the computer model of the facial features. Chishti et al. teaches to create a computer model of the teeth from a physical

model of the teeth that has been obtained (Chishti et al.; paragraph 0018). It would have been obvious to one skilled in the art to combine the teaching of Chisti to that of Lemchen because they are analogous in creating a computer model of a person's physical attributes. One in the art would have been motivated to incorporate the teaching of Chisti et al. to that of Lemchen in order to incorporate a computer model of the jaw into the image of the facial features wherein the motion of the human jaw can be observed (Chisti et al.; paragraph 0023).

Regarding claim 4: The method wherein said step of creating a first computer model includes the sub step of scanning the person's face in a plurality of poses with a laser scanner (Lemchen; col. 5 lines 60-64, where multiple images are taken).

Lemchen discloses to take multiple images of a person's physical structures and wherein different scanning methods may be used to obtain the images (Lemchen; col. 5 lines 55-64). Lemchen does not teach to obtain images using a laser scanner. Chishti et al. teaches to use a laser scanning method to obtain images of a person's physical attributes (Chishti et al.; paragraph 0018). It would have been obvious to one skilled in the art to substitute the laser scanning method of Chishti et al. into the system of Lemchen since the system incorporates images taken from multiple different scanning devices.

Regarding claim 7: The method wherein said step of creating a second computer includes the sub step of scanning said physical model of said teeth with a laser scanner.

It is rejected for the combination of reasons of claims 1 and 4 above.

Regarding claim 8: The method further including the step of creating a bite jig having an orientation plate that extends outside the mouth (Lemchen; fig. 1 element 26 and col. 5 lines 45-50, wherein the bite fixture extends outside of the mouth and this device is read as a bite jig).

Regarding claim 9: The method further including the steps of: It is rejected for the same reasons as claim 1 above and for the following limitation of: scanning the patient's head while biting the bite jig to create a first collection of data points (Lemchen; col. 5 lines 48-52).

Regarding claim 10: It is rejected for the same reason as claim 1 above.

B.) Claims 2, 3, and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemchen (U.S. patent 6,081,739), as modified by Chishti et al. (U.S. patent pub. 2001/0002310 A1), and further in view of Franck et al. (U.S. patent pub. 2001/0027271 A1).

Regarding claims 2, 3, 16 and 17: The method further including the step of creating a third computer model of the person's skull and incorporating it into the model of a person's facial features..

Lemchen, as modified by Chisti et al., teaches to generate a computer model of a patient's features including the computer model of a patient's jaw. Lemchen, as modified by Chisti et al., does not teach to create and incorporate a computer model of a person's skull into the computer model of the patient's facial features. Franck et al. teaches to create a computer model of a person's skull (Franck et al.; paragraphs 0058 and 0060). It would have been obvious to one

skilled in the art to combine the teaching of Franck et al. to that of Lemchen, as modified by Chisti et al., because they are analogous in computer modeling of anatomical/facial features. One in the art would have been motivated to incorporate the teaching of Franck et al. into the system of Lemchen, as modified by Chisti et al., in order to locate a target in the human body, in particular in the brain or spine, for medical and surgical treatment (Franck et al.; paragraph 0003).

Regarding claim 11: It is rejected for the same reason as claim 2 above and for the following limitation of altering the generic skull model to correspond to the data corresponding to the skull of the person (Lemchen; col. 7 lines 25-30, where the data can be manipulated).

Regarding claim 12: It is rejected for the combination of claims 1 and 2.

Regarding claim 13: It is rejected for the same reasons as claim 1 above.

Regarding claim 14: The method wherein said step of animating said computer model includes creating a theoretical appearance of craniofacial features and animating said computer model between modeled craniofacial features and said theoretical appearance (Chishti et al.; paragraph 0019, where the graphical representation of the images is animated).

Regarding claim 15: The method wherein said step of animating said computer model includes animating said computer model to mimic actions selected from a group consisting of chewing, grinning, smiling, growing and aging (Lemchen; paragraph 0023, where the motion of the jaw is analyzed).

Regarding claim 18: It is rejected for the same reason as claim 4 above.

C.) Claims 5, 6, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemchen (U.S. patent 6,081,739), as modified by Chishti et al. (U.S. patent pub. 2001/0002310 A1), and further in view of Bergerson (U.S. patent 5,882,192).

Regarding claims 5, 6, 19, and 20: The method wherein said step of creating a first computer model includes taking a plurality of digital photographs of the person's face and incorporating the digital photographs with the scans.

Lemchen, as modified by Chishti et al., teaches to create computer models of a person's physical attributes using multiple scanning devices, such as a video camera, and incorporating all the scans together to form the computer model (Lemchen; col. 5 lines 55-60 and col. 6 lines 17-27). Lemchen, as modified by Chishti et al., does not teach to obtain digital photographs of a person's physical attributes and to incorporate the digital photographs into the combined computer model. Bergersen teaches to obtain digital photographs of a person's face and teeth (Bergersen; col. 4 lines 35-52). It would have been obvious to one skilled in the art to combine the teaching of Bergersen to that of Lemchen, as modified by Chishti et al., because they are analogous in obtaining a person's physical attributes. One in the art would have been motivated to either substitute for the video camera imaging, of Lemchen, or incorporate the digital photograph scanning method, of Bergersen, into the system of Lemchen to have another type of scanning method to either match up data, superimpose the different scanned data, or incorporation of different scanning datas into one set to have a method which would give a better correlation of a person's physical attributes.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hayes, JR. et al. (U.S. patent 5,960,099) for creating a digitized likeness of a person.

Liu et al. (U.S. patent pub. 2002/0012454 A1) for animating a face.

Contact Information

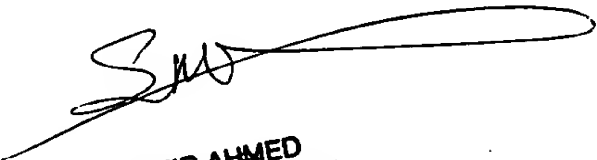
3. Any inquiry into this communication should be directed to Anand Bhatnagar whose telephone number is 703-306-5914, whose supervisor is Amelia Au whose number is 703-308-6604, group receptionist is 703-305-4700, and group fax is 703-872-9306.

AB

Anand Bhatnagar

Art Unit 2623

April 19, 2004


SAMIR AHMED
PRIMARY EXAMINER